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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,373	04/24/2006	Benoit Fecamp	134643/0341-035	2575
86661	7590	02/01/2010		
Potomac Patent Group PLLC P.O. Box 270 Fredericksburg, VA 22404			EXAMINER WONGWIAN, PHUTTHIWAT	
			ART UNIT	PAPER NUMBER
			3741	
			NOTIFICATION DATE	DELIVERY MODE
			02/01/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com  
gpo.mail@ge.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,373	<b>Applicant(s)</b> FECAMP ET AL.	
	<b>Examiner</b> PHUTTHIWAT WONGWIAN	<b>Art Unit</b> 3741	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09/30/2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/22/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/30/2009</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is responsive the amendment filed on 09/30/2009. Claim 2 has been cancelled, claims 6-9 have been added and accordingly claims 1 and 3-9 are currently pending in this application.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 3-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Specification***

3. The amendment filed 09/30/2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The subject matter of newly added claim 8, "removed part of the fluid flow passing through the compressor is returned to an inlet of the compressor" was not described in the original specification or drawings.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claim 8, "removed part of the fluid flow passing through the compressor is returned to an inlet of the compressor" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. As to claim 1, the newly added limitation "the least one calculation unit calculates the flow rate of the bleed system based on the ambient temperature and the rotation of the adjustable vanes" was not described in the specification of how flow rate is being calculated based on the ambient temperature and the rotation of the guide vanes.

8. As to claim 3, the newly amended limitation "at least one calculation unit further used a compressor inlet pressure and an absolute humidity at the compressor inlet to calculate the flow rate of the bleed system" was not described the specification of how flow rate is being calculated based on the compressor inlet pressure and an absolute humidity.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3741

10. Claims 1 and 3-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. As to claim 1, the limitation "the least one calculation unit calculates the flow rate of the bleed system based on the ambient temperature and the rotation of the adjustable vanes" is unclear of how the flow rate is being calculated.

12. As to claim 3, "at least one calculation unit further used a compressor inlet pressure and an absolute humidity at the compressor inlet to calculate the flow rate of the bleed system" is unclear of how the flow rate is being calculated.

13. As to claims 3 and 4, "The system according to Claim 1", the word claim should be changed to lower case "claim".

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skowronski (US Patent No. 6,170,251) in view of Schneider (US Patent No. 6,584,775).

16. As to claim 1 and 3, Skowronski discloses a system (fig. 2) for [intended use] controlling and optimizing emissions of a catalytic combustor in a gas turbine, the

Art Unit: 3741

system comprising: at least one calculation unit 106 (fig. 2) configured to implement a mathematical model (col. 5, line 49-51, "The guide vanes 102 are controlled by a control 106 using a feedback control loop or a feed forward control loop.") of an operation of the gas turbine.

Skowronski does not disclose that *the mathematical model links a flow rate of a bleed system to (i) an ambient temperature and (ii) a rotation of adjustable vanes that control a fluid entering a compressor, and the at least one calculation unit calculates the flow rate of the bleed system based on the ambient temperature and the rotation of the adjustable vanes and uses a compressor inlet pressure and an absolute humidity to calculate the flow rate such that the emissions are optimized during variations of operating conditions of a turbine over a range of external environmental conditions from approximately -29°C to +49°C.*

However, Schneider teaches it is well known to determine "the air flow rate through the gas turbine as related to a reference air mass flow rate at a reference ambient air temperature, ambient air pressure, ambient air humidity, inlet guide van position, and compressor inlet temperature, as a function of at least one of actual ambient air temperature, ambient air pressure, ambient air humidity, inlet guide vane position, and compressor inlet temperature" (col. 9, lines 34-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Skowronski's controller such that *it links a flow rate of a bleed system to (i) an ambient temperature and (ii) a rotation of adjustable vanes that control a fluid entering a compressor, and the at least one calculation unit*

Art Unit: 3741

*calculates the flow rate of the bleed system based on the ambient temperature and the rotation of the adjustable vanes and uses a compressor inlet pressure and an absolute humidity to calculate the flow rate such that the emissions are optimized during variations of operating conditions of a turbine over a range of external environmental conditions from approximately -29°C to +49°C.*

Note that in the amended claims 1 and 3, limitations "the calculate unit calculates the flow rate based on the ambient temperature and rotation of the adjustable vanes, and at least one calculation unit further uses a compressor inlet pressure and an absolute humidity at the compressor inlet to calculate the flow rate" are considered to be intended use recitation, since it is an apparatus claim. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure **is capable of performing the intended use, then it meets the claim**. In a claim drawn to process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458,459 (CCCPA 1963).

17. As to claim 4, Skowronski discloses the essential features of the claimed invention except *the at least one calculation unit uses values in the range from 0 to -50 degrees for the rotation of the adjustable vanes and in the range from 0 to 5% of the flow rate (W2) for the bleed system.*



However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to *uses values in the range from 0 to -50 degrees for the rotation of the adjustable vanes and in the range from 0 to 5% of the flow rate (W2) for the bleed system for calculation*, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233, as suggested and taught by Skowronski, for the purpose of optimizing the performance of the gas turbine.

18. As to claims 5-9, Skowronski discloses the compressor 104 (fig. 2) configured to drawn a fluid (fig. 2, "AMBIENT AIR") at the predetermined flow rate W2; the catalytic combustor 24 (fig. 2) connected to an outlet (fig. 2) of the compressor and including a combustion region 24 (fig. 2), a catalytic cell (col. 2, line 40-41, "combustor 24 contains a suitable catalyst") and a post-combustion region (fig. 2), wherein the combustion region is configured to mix and burn a compressed fluid (fig. 2) flow from an exhaust of the compressor with a fuel flow (col. 2, line 32, "Any suitable gaseous fuel can be used"); the turbine connected to the post-combustion region (fig. 2) and configured to transform an enthalpy of the burned mixed of fluid from the compressor and the fuel flow into mechanical energy (fig. 2, inherent); the adjustable vanes 102 (fig. 2) provided at an inlet (fig. 2) of the compressor and configured to rotate to adjust a fluid flow entering the compressor 104 (fig. 2); the bleed system provided at an outlet of the compressor (fig. 2) and configured to remove part of the fluid flow passing through the compressor (fig. 2, inherent), wherein the removed part of the fluid flow passing through

Art Unit: 3741

the compressor is returned to an inlet of the compressor (fig. 2) and wherein the at least one calculation unit 106 (fig. 2) adjusts the flow rate (fig. 2) of the bleed system such that [desired result] a temperature (T3) at the compressor exhaust is maintained constant over the ambient temperature varying from approximately -29°C to +49°C.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUTTHIWAT WONGWIAN whose telephone number is 571-270-5426. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:00pm EST.

Art Unit: 3741

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL A. CUFF can be reached on 571-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. W./  
Examiner, Art Unit 3741

/Michael Cuff/  
Supervisory Patent Examiner, Art Unit 3741